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ABSTRACT

This paper describes a computer program, Major Advisor (MA), which helps students identify college majors. Used in conjunction with career counseling and advising, MA provides information to students who are developing their educational plans. The program matches students' personal preferences and the requirements/characteristics of 130 common four-year college majors. The higher the percent match score between the student and the major, the more closely the student's self-identified characteristics and preferences fit the profile of characteristics associated with that major. From the list of high major match scores, student may narrow the selections by identifying majors they would like to consider further. The characteristics and requirements of the majors listed in MA were defined by correlating majors and occupations, by establishing the worker trait interest and temperament patterns of these occupations, and by identifying special requirements associated with different occupations. Designed to run on an Apple Macintosh computer, this interactive program features graphics and animation, a user-friendly computer interface, printing options, a short testing time (about ten minutes), immediate results, and the opportunity to change responses. Reliability and validity data on the program are not yet available. (RJM)

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Major Advisor

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MAJOR ADVISOR

Description
The *MajorAdvisor* (MA) is a computer program designed to help students identify college majors that match these personal characteristics and preferences. It consists of 27 items related to interests, temperaments, educational development and length of educational preparation time.

It provides students with scores that show the percent match between their personal preferences and the requirements/characteristics of 130 common four-year college majors.

Application in Counseling/Advising
The MA is specifically designed for use by high school counselors, college and university advisors/counselors and educational consultants in their effort to help students age 16 and older select a four-year college course of study. It is ideal in working with individuals and small groups or classes such as orientation to college and career planning. Its primary use is in the context of counseling and advising as a tools for providing information to students who are in the process of developing their educational plans.

As a counseling/advising tool it can serve to:

- Stimulate thinking about college programs
- Present a new set of educational choices
- Focus on program options
- Confirm choices that have already been made
- Suggest concurrent areas of study
- Introduces the titles and terms commonly used to identify majors

Students who pursue one of the majors suggested by a high percent match are likely to find the coursework in this major more interesting, rewarding and satisfying than coursework in one of the majors with a low percent match.

Special Features
While the MA is similar to some of the other instruments which help students identify college majors, it has a combination of features that increase its usefulness beyond that of other instruments.

Important features of the MA include:

- Graphics and animation, which serve to keep students interested and focused on the task
- A user friendly computer interface, which makes the program easy to use and allows for minimal counselor supervision
- Printing options, which provide an opportunity for students to take relevant information with them for further study
- Short testing time, with most students completing the questions in about 10 minutes

- Immediate results, with scoring turn-around time of less than one minute
- Opportunity to change responses, thereby showing students how options may change as personal preferences change
- One of the few interactive computer programs to focus on selecting a college major

Computer Requirements
The MA was prepared to run on an Apple Macintosh computer with HyperCard version 2.0 or higher. It works best installed on a hard drive.

Rationale
College bound high school students are typically expected to decide, at least tentatively, on a college major sometime during their last two years of high school. In fact, some colleges/universities will not admit students who are undecided. College programs are offered so that students must decide on a major no later than the end of their sophomore year. In some college programs, such as engineering, students are required to take a number of related courses in a specified sequence during their first two years of college. In such programs, it is important for students to make an early decision about a major in order to avoid going back to take classes that could have been completed earlier.

Most transfer bound high school students, however, have not definitely decided on a major before they leave high school and most college students change majors one or more times before making a final decision. In general, students are not sure which program of study might best suit to their personal preferences and characteristics, and many students indicate they would like help in making a choice. The MA was specifically designed to assist students in this important task.

Development and Sources
One hundred and thirty common college majors were chosen as representative of typical student interests. The characteristics and requirements of the majors were defined using the following procedures:

(1) Occupations were identified that served as likely avenues of employment for graduates in each major.
(2) The worker trait interest and temperament patterns of these occupations were identified and ascribed to each major.
(3) Other definitive characteristics/requirements--such as the levels of reasoning, mathematics, and language; spatial/form discrimination; and length of time required to complete a program --were identified and listed for each major.

From these elements, a unique profile was constructed for each of the 130 majors. The profile of attributes of each major provides the criteria to which the personal characteristics and preferences are compared.

The information used to construct the profiles came primarily from various college and university catalogs and from a variety of booklets and

information sheets describing the colleges' major/minor programs. In addition, selected data came from the *Dictionary of Occupational Titles, Worker Trait Requirements*, computer tape, U.S. Department of Labor, 1984, and *DOT Characteristics of Selected California Occupations*, California Occupational Information Coordinating Committee, 1984.

Administration and Scoring
Because the instructions appear on each screen, the MA can generally be self-administered under minimum supervision by a qualified person. Some students may need to be shown how to handle the mouse, which is used to indicate responses and navigate from screen to screen. A tenth grade reading level is usually sufficient to understand the instructions and questions.

After the student responds to the 27 questions, the program processes the responses and displays all matches over 70 percent. Should there be no matches, or few matches at the 70 percent level or higher, instructions are provided to allow for the display of all matches. The scoring is done automatically usually in less than one minute.

Reliability
(Data is not yet available but is being collected. A 30 day test retest reliability study is in progress.)

Validity
(Data is not yet available but is being collected. A concurrent validity study examining the relationship between the MA and students' majors is in progress. Plans are to conduct a concurrent validity study with the Strong Interest Inventory.)

Interpretation
The higher the percent match score, the more closely the student's self-identified characteristics and preferences match the profile of characteristics associated with the major. From the list of high major match scores, students may narrow the selections by identifying majors they would like to consider further. Students often need information about a major in order to make a decision about it. In addition, they may need to consider other factors such as physical limitations, financial resources, availability of programs, and family expectations or responsibilities. This is where professional counselors/advisors can bring their expertise into the process. They can assist students to obtain information about programs, relate individual needs to educational requirements, and sort out the educational alternatives that can lead to their career objectives.

Related Software
A program called *The College Connection* includes the programs in the *Major Advisor* and also provides information on California public and private four-year institutions including maps, schools offering the designated majors, and information about each institution.